

REMARKS

Claims 1, 2, 4-12, 14-21, 23-29 and 31-36 are pending.

Applicants herein make a REQUEST FOR CONTINUED EXAMINATION under 37 C.F.R. § 1.114.

Applicants thank the Examiner for entering applicants' last Response and Amendment, and for withdrawing, in view thereof, the remaining 35 U.S.C. § 112 ¶2-based rejection.

Applicants thank the Examiner for indicating that all pending claims would be allowed upon filing of a proper Terminal Disclaimer, in view of the non-statutory double patenting rejection (in view of U.S. Patent No. 6,239,298). Applicants respectfully traverse this rejection, based on the differences in structure and oxidative stability of the products formed from the respective 'first moiety' with the second and third moieties, which result in differences in utility of the products as discussed in detail herein.

No new matter has been added.

Nonstatutory Double Patenting Rejection

The Examiner has maintained the rejection of claims 1, 2, 4-12, 14-21, 23-29 and 31-36 as being unpatentable because of alleged obviousness-type double patenting in view of co-owned U.S. Patent No. 6,239,298 (Office Action of 09 August 2005, at page 2).

Specifically, the Examiner asserts that "the unsaturated synthetic base oil of the present invention satisfies the unsaturated triglyceride plant oil thermal polymer of the '298 patent."

Applicants respectfully traverse this rejection, based on the arguments already of record, and the fact that the *first* moieties are distinguishable, as are the reaction products thereof with the second and third moieties, and this is particularly true in the case of thermal polymers cited by the Examiner. Moreover, these differences result in fundamental differences in product utility because of differences in, for example, oxidative stability.

Contrary to the Examiner's assertion, thermal co-polymerization, as is well appreciated in the relevant art, would result in significant cross-linking of the unsaturated sites of the carbon

chains, and would produce vastly different products with distinctive molecular weight, viscosity, etc., relative to the instant products.

Additionally, as previously discussed, the '298 patent relates to fuel lubricity additives, and recites and claims the use of an "unsaturated triglyceride plant oil or a thermal polymer thereof" as a *first* moiety, whereas the claims of the instant application recite use of "unsaturated synthetic base oil" first moiety.

Significantly, because they are naturally occurring plant oils that are heterogenous with respect to carbon chain length and degree of unsaturation, the *first* moiety unsaturated triglyceride plant oils of the '298 patent (e.g., tung oil, rapeseed oil, soybean oil, etc.) are heterogenous and comprise, to various extents, significantly polyunsaturated (e.g., diene, polyene) fatty acids chains such that the resulting *first* moiety-*second* moiety products, and the subsequent products with *third* moieties are correspondingly heterogenous and polyunsaturated compared to the instant products.

For example, Figure 1 of the '298 patent (Attached hereto as APPENDIX A) shows a product of rapeseed oil, maleic anhydride and trimethylolpropane that has polyunsaturated carbon chains, and five (5) double bonds. By contrast, TMOSS, made from an unsaturated synthetic base oil trimethylol propane trioleate)) is relatively unsaturated; APPENDIX B, attached hereto, shows the Trimethylol Propane Trioleate cycloaddition product with sorbic acid, to produce a product that has only two (2) double bonds.

Significantly, according to aspects of the present invention, the higher degree of unsaturation in the products derivable from the naturally occurring plant oils, results in lower oxidative stability (as can be measured by Iodine No. or oxidation studies). Indeed, as taught and confirmed in Examples 2 and 3 of the instant application, TMOSS (made from an unsaturated synthetic base oil) is as effective at preventing wear as the additive made by the same process from soybean oil, but is much more stable in high temperature, oxidizing conditions, as would be found in an engine crankcase (see Specification at page 13, lines 33-35).

Therefore, applicants respectfully disagree with the Examiner's assertion that "the unsaturated synthetic base oil of the present invention satisfies the unsaturated triglyceride plant oil

thermal polymer of the '298 patent.” Again, in addition to the structural/chemical differences discussed above, thermal copolymerization of purified vegetable oils would be expected to result in significant cross-linking of the unsaturated sites of the carbon chains, and would produce vastly different products with distinctive molecular weight, viscosity, etc.

Applicants, therefore, respectfully request withdrawal of the Examiner’s rejections based on obviousness-type double patenting.

Voluntary Claim Amendment

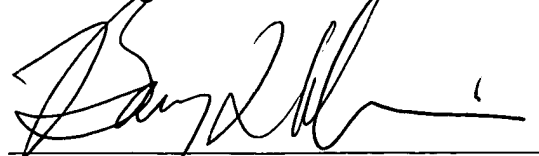
Applicants have made clarifying amendments to claim 28, which now recites “a conjugated diene and a carboxylic acid or anhydride group,” rather than the more ambiguous “a diene conjugated carbon-carbon double bond and a carboxylic acid moiety or anhydride group.” This amendment strictly conforms to those made to claims 1, 11 and 20 in applicants’ last filed Response and Amendment (see pages 111 and 12 thereof), and support for this amendment is already of record. No new matter has been added.

CONCLUSION

In view of the foregoing amendments and remarks, applicants respectfully request entry of the present Response and Amendment, and allowance of all claims 1, 2, 4-12, 14-21, 23-29 and 31-36. The Examiner is encouraged to phone applicants’ attorney, Barry L. Davison, to resolve any outstanding issues and expedite allowance of this application.

Respectfully submitted,

Davis Wright Tremaine LLP

A handwritten signature in black ink, appearing to read 'Barry L. Davison', written over a horizontal line.

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